

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 December 2001 (27.12.2001)

PCT

(10) International Publication Number
WO 01/99194 A3

(51) International Patent Classification⁷: H01L 23/528,
23/50, 21/66, 27/10, 21/82

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(21) International Application Number: PCT/US01/19242

(22) International Filing Date: 14 June 2001 (14.06.2001)

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(25) Filing Language: English

(81) Designated States (national): JP, KR.

(26) Publication Language: English

(30) Priority Data:
09/596,129 16 June 2000 (16.06.2000) US

(84) Designated States (regional): European patent (AT, BE,
CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE, TR).

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Published:

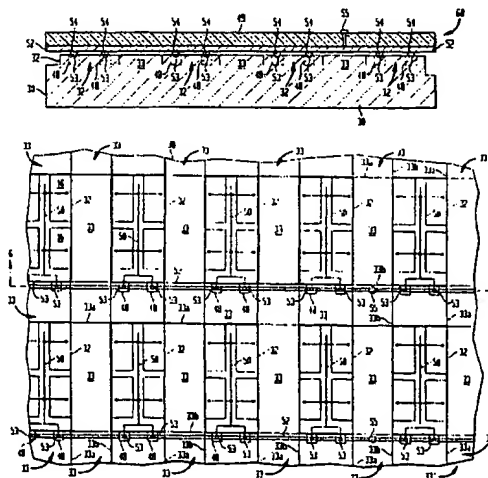
- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

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(88) Date of publication of the international search report:
2 May 2002

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: SEMICONDUCTOR ARRANGEMENT



(57) Abstract: A semiconductor packaging arrangement, or module, includes a printed circuit board having an electrical interconnect thereon and a semiconductor package mounted to the printed circuit board. The semiconductor package includes a fractional portion of a semiconductor wafer having a plurality of integrated circuit chips thereon, such chips being separated by regions in the fractional portion of the wafer. The fractional portion of the wafer has a plurality of electrical contacts electrically connected to the chips. The package also includes a dielectric member having an electrical conductor thereon. The electrical conductor are electrically connected to the plurality of electrical contacts of the plurality of chips to electrically interconnect such plurality of chips with portions of the electrical conductor spanning the regions in the fractional portion of the wafer. A connector is provided for electrically connecting the electrical conductor of the package to the electrical interconnect of the printed circuit board.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/19242

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L23/528 H01L23/50 H01L21/66 H01L27/10 H01L21/82

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 013, no. 539 (E-853), 30 November 1989 (1989-11-30) -& JP 01 220843 A (NEC CORP), 4 September 1989 (1989-09-04) abstract	1,6-9
Y		2,5
A		3,4
Y	US 6 055 655 A (MOMOHARA TOMOMI) 25 April 2000 (2000-04-25)	2,5
A	the whole document	1,3,4, 6-9

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

14 February 2002

Date of mailing of the international search report

22/02/2002

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INTERNATIONAL SEARCH REPORT

Int. .ional Application No

PCT/US 01/19242

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 013, no. 034 (E-708), 25 January 1989 (1989-01-25) -& JP 63 234553 A (NEC CORP), 29 September 1988 (1988-09-29) abstract ---	1,6-9
A	PATENT ABSTRACTS OF JAPAN vol. 016, no. 478 (E-1274), 5 October 1992 (1992-10-05) -& JP 04 171860 A (HITACHI LTD), 19 June 1992 (1992-06-19) abstract ---	1,6-9
A	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 11, 30 September 1999 (1999-09-30) & JP 11 163062 A (TOSHIBA CORP), 18 June 1999 (1999-06-18) abstract -----	1,3,5-9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/19242

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 01220843	A	04-09-1989	NONE	
US 6055655	A	25-04-2000	JP 10070243 A CN 1190262 A	10-03-1998 12-08-1998
JP 63234553	A	29-09-1988	JP 1877876 C JP 6003838 B	07-10-1994 12-01-1994
JP 04171860	A	19-06-1992	NONE	
JP 11163062	A	18-06-1999	NONE	